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 NO 9902701 A 19990603

NO 9902701 A0 19990603  
US 6353577 BA 20020305

US 2002126575 AA 20020912  
 WO 9812577 A1 19980326  
 WO 9828636 A1 19980702

6 priorities, 14 applications, 23 publications

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 John Bouchem

713-513-2575

(X) (1) WO A 97 30361  
 (X) (2) US 5619474 WO 98/28636 = PCT GB97/03507

(X) (3) US 3774570

(X) (4) US 5443027

(X) (5) EP A-0193215

(X) (6) US 4745583

WO 98 28636

(X) PCT / GB 97 / 03507

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(X) 5619474 Kuchner

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Foreign Application

UK 9626442.9

Dec 170/1996

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FILED

→ 19 Dec 1997

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→ July 02, 1998

PCT GB97/03507

→ File Dec 20, 1997

→ Priority to 9626442.9

UK 9726974.0

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→ June 06, 1999

FILE

19 Dec 1997

WO 9812577

WO 9828636

L2 ANSWER 1 OF 9 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1998-377798 [32] WPIX  
DNN N1998-295320  
TI Control device for marine seismic streamer - has attached control device with controllable wings which are rotated to control lateral position and depth.  
DC S03 V06 W06  
IN BITTLESTON, S H  
PA (SLMB) SCHLUMBERGER HOLDINGS LTD; (SLMB) SERVICES PETROL SCHLUMBERGER; (GECO-N) GECO AS; (BITT-I) BITTLESTON S H  
CYC 79  
PI WO 9828636 A1 19980702 (199832)\* EN 16p  
RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA  
PT SD SE SZ UG ZW  
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GE GH  
HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX  
NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU  
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AU 9853305 A 19980717 (199848)  
GB 2331971 A 19990609 (199925)  
NO 9902701 A 19990603 (199937)  
EP 939910 A1 19990908 (199941) EN  
R: DE FR IT NL SE  
GB 2331971 B 19991117 (199951)  
EP 939910 B1 20000726 (200036) EN  
R: DE FR IT NL SE  
DE 69702673 E 20000831 (200050)  
NO 310127 B1 20010521 (200131)  
AU 734810 B 20010621 (200141)  
US 2002126575 A1 20020912 (200262)  
ADT WO 9828636 A1 WO 1997-GB3507 19971219; AU 9853305 A AU 1998-53305 19971219; GB 2331971 A GB 1997-26974 19971219; NO 9902701 A WO 1997-GB3507 19971219, NO 1999-2701 19990603; EP 939910 A1 EP 1997-950296 19971219, WO 1997-GB3507 19971219; GB 2331971 B GB 1997-26974 19971219; EP 939910 B1 EP 1997-950296 19971219, WO 1997-GB3507 19971219; DE 69702673 E DE 1997-602673 19971219, EP 1997-950296 19971219, WO 1997-GB3507 19971219; NO 310127 B1 WO 1997-GB3507 19971219, NO 1999-2701 19990603; AU 734810 B AU 1998-53305 19971219; US 2002126575 A1 Cont of US 1999-284030 19990406, US 2001-893234 20010626  
FDT AU 9853305 A Based on WO 9828636; EP 939910 A1 Based on WO 9828636; EP 939910 B1 Based on WO 9828636; DE 69702673 E Based on EP 939910, Based on WO 9828636; NO 310127 B1 Previous Publ. NO 9902701; AU 734810 B Previous Publ. AU 9853305, Based on WO 9828636  
PRAI **GB 1996-26442 19961220**  
AB WO 9828636 A UPAB: 19980812  
The marine seismic streamer is an elongated cable-like structure which is typically several thousand meters long, and contains an array of hydrophones and electronic equipment. The streamer control device (10) has an elongated streamlined body (12) which is mechanically and electrically connected in series with a multi-section streamer (14).  
Each end of the body has a connector (16,18). The device has two opposed control surfaces or wings (24), typically moulded from fibre-reinforced plastics, projecting outwards from the body. A control system (26) rotates the wings to control the lateral position and the depth of the streamer.  
ADVANTAGE - Improves the control of the lateral position and depth of the streamer.  
Dwg.1/5  
PI WO 9828636 A1 19980702 (199832)\* EN 16p G01V001-38  
RW: AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA

STIC SEARCH  
Keep in File

PT SD SE SZ UG ZW

W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GE GH  
 HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX  
 NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU

ZW

AU 9853305 A 19980717 (199848)

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G01V001-38

NO 9902701 A 19990603 (199937)

G01V001-20

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R: DE FR IT NL SE

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G01V001-38

R: DE FR IT NL SE

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G01V001-38

NO 310127 B1 20010521 (200131)

G01V001-20

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ADT WO 9828636 A1 WO 1997-GB3507 19971219; AU 9853305 A AU 1998-53305

19971219; GB 2331971 A GB 1997-26974 19971219; NO 9902701 A WO 1997-GB3507

19971219, NO 1999-2701 19990603; EP 939910 A1 EP 1997-950296 19971219, WO

1997-GB3507 19971219; GB 2331971 B GB 1997-26974 19971219; EP 939910 B1 EP

1997-950296 19971219, WO 1997-GB3507 19971219; DE 69702673 E DE

1997-602673 19971219, EP 1997-950296 19971219, WO 1997-GB3507 19971219; NO

310127 B1 WO 1997-GB3507 19971219, NO 1999-2701 19990603; AU 734810 B AU

1998-53305 19971219; US 2002126575 A1 Cont of US 1999-284030 19990406, US

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FDT AU 9853305 A Based on WO 9828636; EP 939910 A1 Based on WO 9828636; EP

939910 B1 Based on WO 9828636; DE 69702673 E Based on EP 939910, Based on

WO 9828636; NO 310127 B1 Previous Publ. NO 9902701; AU 734810 B Previous

Publ. AU 9853305, Based on WO 9828636

PRAI GB 1996-26442 19961220

L2 ANSWER 2 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 1

AN 184480215 INPADOC ED 20021002 EW 200239 UP 20021002 UW 200239  
 TI CONTROL DEVICES FOR CONTROLLING THE POSITION OF A MARINE SEISMIC STREAMER  
 IN BITTLESTON SIMON HASTINGS  
 INS BITTLESTON SIMON HASTINGS  
 INA NO  
 PA BITTLESTON SIMON HASTINGS  
 PAS BITTLESTON SIMON HASTINGS  
 PAA NO  
 DT Patent  
 PIT USAA PATENT APPLICATION PUBLICATION (PRE-GRANT)  
 PI US 2002126575 AA 20020912  
 AI US 2001-893234 A 20010626  
 PRAI US 2001-893234 A 20010626  
     **GB 1996-26442 A 19961220**  
     US 1999-284030 B1 19990406  
 AB A control device or "bird" for controlling the position of a marine seismic streamer is provided with an elongate, partly flexible body which is designed to be electrically and mechanically connected in series with a streamer. In its preferred form, the bird has two opposed wings which are independently controllable in order to control the streamer's lateral position as well as its depth.

PATENT FAMILY INFORMATION

AN 184480215 INPADOC

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 GB 1996-19699 A 19960920

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US 1999-284030 B1 19990406  
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 AU 1997-43104 A 19970919  
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 GB 1996-19699 A 19960920  
 GB 1997-26974 A 19971219  
 GB 1999-5764 A 19970919  
 US 1999-269016 A 19990317  
 WO 1997-GB2536 A 19970919  
 AU 1998-53305 A 19971219  
 DE 1997-69702673 A 19971219  
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 GB 1996-26442 A 19961220  
 GB 1997-26974 A 19971219  
 NO 1999-2701 A 19990603  
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 US 2001-893234 A 20010626  
 AU 1997-43104 A 19970919  
 EP 1997-919171 A 19970919  
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 DE 1997-69702673 A 19971219  
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EP 1997-919171	A	19970919	DE 69702673	T2 20010405
EP 1997-950296	A	19971219	EP 932843	A1 19990804
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			EP 939910	B1 20000726
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			GB 2332275	B2 20010214
			GB 9905764	A0 19990505
NO 1999-2701	A	19990603	NO 310127	B1 20010521 ..
			NO 9902701	A 19990603
			NO 9902701	A0 19990603
US 1999-269016	A	19990317	US 6353577	BA 20020305
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WO 1997-GB2536	A	19970919	WO 9812577	A1 19980326
WO 1997-GB3507	A	19971219	WO 9828636	A1 19980702

6 priorities, 14 applications, 23 publications

L2 ANSWER 3 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 2

AN 134498850 INPADOC ED 20010410 EW 200114 UP 20010410 UW 200114  
 TI STEUERGERAETE ZUR POSITIONssteuerung EINES MEERESSEISMISCHES MESSKABELS  
 IN BITTLESTON, HASTINGS  
 INS BITTLESTON HASTINGS  
 INA NO  
 PA SERVICES PETROLIERS SCHLUMBERGER, PARIS; SCHLUMBERGER HOLDINGS LTD., ROAD  
 TOWN  
 PAS SCHLUMBERGER SERVICES PETROL; SCHLUMBERGER HOLDINGS  
 PAA FR; VG  
 DT Patent  
 PIT DET2 TRANSL. OF THE EUROPEAN PATENT SPECIFICATION  
 PI DE 69702673 T2 20010405  
 AI DE 1997-69702673 A 19971219  
 PRAI **GB 1996-26442** **A 19961220**  
 WO 1997-GB3507 W 19971219

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 AU 1997-43104 A 19970919  
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 GB 1996-19699 A 19960920  
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 GB 9626442 A0 19970205

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		GB 9726974	A0 19980218
GB 1999-5764	A 19970919	GB 2332275	A1 19990616
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		<del>NO 9902701</del>	A0 19990603
US 1999-269016	A 19990317	<u>US 6353577</u>	BA 20020305
→ US 2001-893234	A 20010626	US 2002126575	AA 20020912
WO 1997-GB2536	A 19970919	WO 9812577	A1 19980326
WO 1997-GB3507	A 19971219	WO 9828636	A1 19980702

6 priorities, 14 applications, 23 publications



L2 ANSWER 4 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

## LEVEL 2

AN 112919635 INPADOC ED 20000801 EW 200030 UP 20000801 UW 200030  
 TI CONTROL DEVICES FOR CONTROLLING THE POSITION OF A MARINE SEISMIC STREAMER  
 IN BITTLESTON, SIMON, HASTINGS  
 INS BITTLESTON SIMON HASTINGS  
 INA NO  
 PA SCHLUMBERGER HOLDINGS LIMITED; SERVICES PETROLIERS SCHLUMBERGER  
 PAS SCHLUMBERGER HOLDINGS; SCHLUMBERGER SERVICES PETROL  
 PAA VG; FR  
 TL English; French; German  
 LA English  
 DT Patent  
 PIT EPB1 PATENT  
 PI EP 939910 B1 20000726  
 DS R: DE FR IT NL SE  
 AI EP 1997-950296 A 19971219  
 PRAI WO 1997-GB3507 W 19971219  
**GB 1996-26442 A 19961220**

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WO 1997-GB3507 W 19971219

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 GB 1996-19699 A 19960920  
 GB 1997-26974 A 19971219  
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US 1999-269016	A	19990317	US 6353577	BA 20020305
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WO 1997-GB2536	A	19970919	WO 9812577	A1 19980326
WO 1997-GB3507	A	19971219	WO 9828636	A1 19980702

6 priorities, 14 applications, 23 publications

L2 ANSWER 5 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 4

AN 111417686 INPADOC ED 20010709 EW 200127 UP 20010709 UW 200127  
 TI KONTROLLINNRETNINGER FOR AA KONTROLLERER BAADE HORIZONTAL OG VERTIKAL  
 POSISJONEN FOR EN MARIN SEISMISK STREAMER  
 IN BITTLESTON, SIMON HASTINGS  
 INS BITTLESTON SIMON HASTINGS  
 INA NO  
 PA SCHLUMBERGER HOLDINGS LTD  
 PAS SCHLUMBERGER HOLDINGS  
 PAA VG  
 DT Patent  
 PIT NOB1 GRANTED PATENT (LAW 1997)  
 PI NO 310127 B1 20010521  
 AI NO 1999-2701 A 19990603  
 PRAI GB 1996-26442 A 19961220  
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 GB 9619699 A0 19961106  
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25/07/2003

GB 1997-26974	A 19971219	GB 2331971	A1 19990609
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		GB 2332275	B2 20010214
		GB 9905764	A0 19990505
NO 1999-2701	A 19990603	NO 310127	B1 20010521
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US 2001-893234	A 20010626	US 2002126575	AA 20020912
WO 1997-GB2536	A 19970919	WO 9812577	A1 19980326
WO 1997-GB3507	A 19971219	WO 9828636	A1 19980702

6 priorities, 14 applications, 23 publications

L2 ANSWER 6 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 2

AN 48900033 INPADOC ED 20010730 EW 200130 UP 20010730 UW 200130  
 TI CONTROL DEVICES FOR CONTROLLING THE POSITION OF A MARINE SEISMIC STREAMER  
 IN SIMON HASTINGS BITTLESTON  
 INS BITTLESTON SIMON HASTINGS  
 PA SCHLUMBERGER HOLDINGS LIMITED  
 PAS SCHLUMBERGER HOLDINGS  
 DT Patent  
 PIT AUB2 PATENT (APP. ADVERTISED ACCEPTED)  
 PI AU 734810 B2 20010621  
 AI AU 1998-53305 A 19971219  
 PRAI **GB 1996-26442** **A 19961220**  
 WO 1997-GB3507 W 19971219

PATENT FAMILY INFORMATION

AN 48900033 INPADOC

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 GB 1996-19699 A 19960920

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 AU 1997-43104 A 19970919  
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6 priorities, 14 applications, 23 publications

L2 ANSWER 7 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 1

AN 47322455 INPADOC EW 199829 UP 20011203 UW 200148  
 TI CONTROL DEVICES FOR CONTROLLING THE POSITION OF A MARINE SEISMIC STREAMER  
 IN BITTLESTON, SIMON, HASTINGS  
 INS BITTLESTON SIMON HASTINGS  
 INA NO  
 PA GECO AS; BITTLESTON, SIMON, HASTINGS  
 PAS GECO AS; BITTLESTON SIMON HASTINGS  
 PAA NO; NO  
 TL English; French  
 LA English  
 DT Patent  
 PIT WOA1 PUBL.OF THE INT.APPL. WITH INT.SEARCH REPORT  
 PI WO 9828636 A1 19980702  
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 BY KG KZ MD RU TJ TM

AI WO 1997-GB3507 A 19971219

PRAI **GB 1996-26442** A **19961220**

OSDW 98-377798

AB. A control device (10) (or "bird") for controlling the position of a marine seismic streamer is provided with an elongate, partly flexible, body (12) which is designed to be connected electrically and mechanically in series with the streamer (14). In its preferred form, the bird has two opposed wings (24), which are independently controllable in order to control the streamers lateral position, as well as its depth.

PATENT FAMILY INFORMATION

AN 47322455 INPADOC

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WO 9828636         A1 19980702

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6 priorities, 14 applications, 23 publications



L2 ANSWER 8 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

LEVEL 3

AN 41972116 INPADOC ED 19991130 EW 199947 UP 20011203 UW 200148  
 TI CONTROL DEVICES FOR CONTROLLING THE POSITION OF A MARINE SEISMIC STREAMER  
 IN SIMON HASTINGS \* BITTLESTON  
 INS BITTLESTON SIMON HASTINGS  
 INA NO  
 PA \* GECO A S; \* SCHLUMBERGER HOLDINGS LIMITED  
 PAS GECO AS; SCHLUMBERGER HOLDINGS  
 PAA NO; VG  
 DT Patent  
 PIT GBB2 PATENT GRANTED  
 PI GB 2331971 B2 19991117  
 AI GB 1997-26974 A 19971219  
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 GB 1996-19699 A 19960920

PATENT FAMILY INFORMATION

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6 priorities, 14 applications, 23 publications

L2 ANSWER 9 OF 9 INPADOC COPYRIGHT 2003 EPO on STN

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 DT Patent  
 PIT GBA0 APPLICATION FOR PATENT  
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 AI **GB 1996-26442 A 19961220**  
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6 priorities, 14 applications, 23 publications